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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,409	02/27/2004	Woong-Kwon Kim	053785-5172	4533

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EXAMINER

CHIEN, LUCY P

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/787,409	KIM ET AL.	
	Examiner	Art Unit	
	Lucy P. Chien	2871	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
 4a) Of the above claim(s) 10-18 and 29-40 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-28 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 8, 9, 19 and 21 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 6, 7 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-33 drawn to a transfective liquid crystal display device is readable thereon in the reply filed on December 12, 2005 is acknowledged. Traversal is on the grounds that "there is no undue burden on the Examiner to search all the species..." (Response to restriction requirements page 1).

This is not found to be persuasive because the claims can be separately patentable. Examiner clearly indicated in the Requirement for Restriction that Group I, Claims 1-33 discloses a transfective liquid crystal display device and Group II, Claims 34-40 is drawn to a method of fabricating a transfective liquid crystal display device.

Applicant elected Group I: Species: A2, B1, C1, and D1.
Examiner believes Group I: Species: A2, B1, C1, and D1 belong to claims 1-9, 19-28.
Claims 10-18 are drawn to Group I Species B2-B11, which were not elected.
Claims 29-33 are drawn to Species Group I Species C2, D2, which were not elected.
Applicant has withdrawn claims 34-40.

Examiner will examine Claims 1-9, 19-28.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1,2,5,8,19,21 are rejected under 35 U.S.C. 103(a) as being obvious over Chung et al (US 20010022634) in view of Kikkawa et al (US 6879359)

Regarding Claim 1.

Chung et al discloses (Figure 9A-C) a transfective liquid crystal comprising a thin film transistor (where S is located) disposed at a corner of a pixel region, the thin film transistor including a gate electrode (152) a semiconductor layer (174) a source electrode (162) and a drain electrode (164) a reflector (156 where P is located) disposed in the pixel region and spaced apart from the thin film transistor, wherein the pixel region is divided into a reflective portion (where P is located) including the reflector and a transmissive portion (where 154 is located) absent of the reflector.

Chung et al does not disclose the reflector formed of the same material as one of the gate, source, and drain electrodes, a color filter disposed within the pixel region, the color filter having one of red, green, and blue colors a black matrix over the thin film transistor corresponding to color filter borders of adjacent pixel regions

Kikkawa et al (figure 2) discloses the reflector (23) formed of the same material (same layer as 22) as one of the gate, source, and drain electrodes. A color filter (30) disposed within the pixel region, the color filter (30) having one of red, green, and blue colors a black matrix over the thin film transistor corresponding to color filter borders of

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adjacent pixel regions, and a pixel electrode (31) formed of a transparent conductive material adjacent to the color filter.

It would have been obvious to one of ordinary skilled in the art to modify Chung et al's display to include Kikkawa et al's black matrix used to shield light the light between portions of the pixels and Kikkawa et al's color filter to provide a colorful display. And to provide a high performance LCD and to lower production cost (Column 11, row 44-53) with Kikkawa et al's black matrix adjacent to the color filter on the TFT substrate. Also Kikkawa et al's provides the reflector being made of the same material as the gate electrode (Column 2, Rows 64,65 and Column 8, rows 50-52) to provide high reflectance liquid crystal display.

Regarding Claim 2

In addition to Chung et al and Kikkawa et al as disclosed above, Kikkawa et al (Figure 2) discloses wherein the reflector is formed of the same material as the gate electrode, and is formed at the same time of forming the gate electrode (Column 2, Rows 64,65 and Column 8, rows 50-52).

Regarding Claim 5

In addition to Chung et al and Kikkawa et al as disclosed above, Kikkawa et al (Figure 2) wherein the reflector is formed of the same material as the source and drain electrodes, and is formed at the same time when forming the source and drain electrodes (Column 9, rows 13-19).

Regarding Claim 8

In addition to Chung et al and Kikkawa et al as disclosed above, Chung et al discloses (Figure 8) wherein the transmissive portion (168) surrounds the reflective portion (156).

Regarding Claim 19

In addition to Chung et al and Kikkawa et al as disclosed above, Kikkawa et al (Figure 2) discloses further comprising a passivation layer (28) between the black matrix (29) and the color filter (30).

Regarding Claim 21

In addition to Chung et al and Kikkawa et al as disclosed above, Kikkawa et al (Figure 2) discloses further comprising a passivation layer (28) covering both the thin film transistor and the reflector.

Claim 9 are rejected under 35 U.S.C. 103(a) as being obvious over Chung et al (US 20010022634) and of Kikkawa et al (US 6879359) in view of Kubo et al (US 6195140).

Regarding Claim 9

Chung et al and Kikkawa et al does not disclose wherein the transmissive and reflective portions have a rectangular shape, and diagonal lines of the transmissive portion directly correspond to diagonal lines of the reflective portion.

Kubo et al discloses (Fig. 11a) wherein the transmissive (51) and reflective portions (50) have a rectangular shape, and diagonal lines of the transmissive portion directly correspond to diagonal lines of the reflective portion.

It would have been obvious to one of ordinary skilled in the art to modify Chung et al and Kikkawa et al to include Kubo et al's transmissive and reflective diagonal lines portions being rectangular to prevent light from outside from entering the driving element (Column 14 rows 39-47).

Allowable Subject Matter

Claim 3,4,6,7,20,22-28 are allowed.

Claim 3,4,6,7,20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding Claim 3,6

The prior art of record does not teach nor suggest wherein the reflector and the gate electrode have double-layered structures including a second layer on a first layer, the second layer of the reflector is partially removed to expose an underlying portion of the first layer of the reflector.

Claim 4 is dependent on Claim 3, and Claim 6 is dependent on Claim 7, therefore is allowed.

Regarding Claim 20,24,28

The prior art of record does not teach nor suggest a second pixel electrode on the color filter, contacting the first pixel electrode.

Regarding Claim 22,26

The prior art of record does not teach nor suggest a first buffer pattern disposed in a pixel region on the substrate and spaced apart from the gate electrode; a reflector on the second buffer pattern, the reflector formed of the same material as the source

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and drain electrodes. And a second buffer pattern formed of the same material as the semiconductor layer and formed during the same time as formation of semiconductor layer, the second buffer pattern disposed above the first buffer pattern in the pixel region,

Claims 23-25 are dependent on Claim 22 therefore are allowed.

Claims 27,28 are dependent on Claim 26 therefore are allowed.

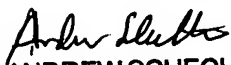
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucy Chien
Examiner
Art Unit 2871
LC


ANDREW SCHECHTER
PRIMARY EXAMINER